I. AMENDMENTS

AMENDMENTS TO THE CLAIMS

Cancel claims 18 and 20-28 without prejudice to renewal.

Please enter the amendments to claims 1, 2, 8, 9, and 11, as shown below.

1. (Currently amended) A method for detecting an amyloid peptide-related neurological disorder in a transgenic mouse model of the disorder, the method comprising:

detecting a level of a calcium-responsive gene product in hippocampal tissue of the transgenic mouse model, wherein the calcium-responsive gene product is selected from a calbindin polypeptide, a neuropeptide Y polypeptide, an α-actinin II polypeptide, a Fos polypeptide, an Arc polypeptide, a phospho-ERK polypeptide, a calbindin mRNA, a neuropeptide Y mRNA, an α-actinin II mRNA, and a Fos mRNA, an Arc mRNA, and ~~a phospho-ERK~~ an ERK mRNA,

and wherein the genome of said transgenic mouse comprises a transgene encoding a mutant amyloid precursor protein;

wherein detection of a level of calcium-responsive gene product in the hippocampal tissue that differs from a level of the calcium-responsive gene product associated with a normal control mouse is indicative of an amyloid peptide-related neurological disorder in the mouse.

2. (Currently amended) The method of claim 1, wherein the ~~non-human animal~~ transgenic mouse model is an $hAPP_{FAD}/A\beta$ transgenic ~~non-human animal~~ mouse model of Alzheimer's Disease.

3. (Canceled)

4. (Previously presented) The method of claim 1, wherein the brain tissue is dentate gyrus.

5.-6. (Canceled)

7. (Previously presented) The method of claim 1, wherein the neurological disorder is impaired spatial learning or impaired memory.

8. (Currently amended) A method for identifying a candidate agent for treating an amyloid peptide-related neurological disorder, the method comprising:

administering a test agent to a transgenic mouse model of an amyloid peptide-related neurological disorder, wherein the genome of said transgenic mouse comprises a transgene encoding a mutant amyloid precursor protein; and

detecting a level of a calcium-responsive gene product *in vitro* in hippocampal tissue of the mouse, wherein the calcium-responsive gene product is selected from a calbindin polypeptide, a neuropeptide Y polypeptide, an α-actinin II polypeptide, a Fos polypeptide, an Arc polypeptide, a phospho-ERK polypeptide, a calbindin mRNA, a neuropeptide Y mRNA, an α-actinin II mRNA, and a Fos mRNA, an Arc mRNA, and ~~a phospho-ERK~~ an ERK mRNA;

wherein detection of a level of calcium-responsive gene product in the hippocampal tissue that differs significantly from a level of the calcium-responsive gene product in the absence of the agent indicates that the test agent is a candidate agent for treating an amyloid peptide-related neurological disorder.

9. (Currently amended) The method of claim 8, wherein the ~~non-human animal~~ transgenic mouse model is an $hAPP_{FAD}$/Aβ transgenic ~~non-human animal~~ mouse model of Alzheimer's disease.

10. (Canceled)

11. (Currently amended) The method of claim 8, wherein the ~~brain~~ hippocampal tissue is dentate gyrus.

12. (Previously presented) The method of claim 8, wherein the neurological disorder is impaired spatial learning or impaired memory.

13.-15. (Canceled)

16. (Previously presented) The method of claim 1, wherein the amyloid peptide-related neurological disorder is a behavioral deficit.

17. (Previously presented) The method of claim 8, wherein the amyloid peptide-related neurological disorder is a behavioral deficit.

18.-28. (Canceled)